

# Technical Management Team Meeting Notes

August 15, 2001

## *1. Greetings and Introductions.*

The August 15 Technical Management Team meeting, held August 15 at the Corps' Northwestern Division headquarters in Portland, Oregon, was chaired by Cathy Hlebechuk of the Corps. Please note that this is a summary, not a verbatim transcript, of items discussed, recommendations made and work products assigned at this meeting. Anyone with questions about these minutes should contact Hlebechuk at 503/808-3942.

## *2. McNary Mixers Status.*

The Corps' Mark Smith, working from a series of overheads, briefed the TMT on the status of the forebay mixer experiment at McNary Dam. As the TMT is aware, said Smith, every summer, water temperatures become a concern at McNary. The problem seems to be that, at the south end of the forebay, there is a shallow cul-de-sac where the water is heated by the sun. That water is drawn across the front of the powerhouse into the gatewells, increasing water temperatures in the gatewells, sometimes to lethal levels, Smith said. The other concern is that, as that water moves from the gatewell to the collection channel, it creates a temperature gradient from one end of the collection channel to the other. When fish hit that gradient, it can adversely impact both fish health and migratory progress.

So what we're trying to do this year is mix the water in the cul-de-sac with cooler water from elsewhere in the forebay, Smith said. We have been operating McNary's north powerhouse, which reduced the problem somewhat; we have also installed two screened, 20 hp, 36" flow mixers, essentially big fans, 10-15 feet deep in the water column at the south end of the powerhouse. Their purpose is to draw cooler water from the forebay and mix it with the warmer water at the south end of the powerhouse, Smith explained.

We've been operating the mixers on a three-day-on, three-day-off schedule for the past week or so, Smith said; they are operating now. Essentially, this is a test of the flow mixer concept, to try to discover whether this might be a permanent fix to the temperature problem at McNary. Smith spent a few minutes describing the monitoring system that has been installed to collect data. He said there is no data to report yet, but some information from the test should be available in a week or so.

Next year, the Corps will take the lessons learned from this year's study and use it to fine-tune the deployment of the same mixers, Smith said. We are also going to begin to study a permanent solution, and will be developing a numerical model of the McNary forebay to get a better handle on what and where our problems are, Smith said. That will likely also require some physical modeling next year, he added.

The bottom line is that the Corps recognizes that the water temperature situation at McNary is a major issue, Smith said; even when summer water temperatures aren't at lethal levels, they still cause stress and delay. To that end, he said, the Corps is also attempting to gather data on fish physiology this year. The study is ongoing, he said; I am confident that we will be able to make a difference in water temperatures in the McNary forebay.

The results will be written up in some sort of report? Paul Wagner asked. Correct, Smith replied – we will have a final report by late November or so, and will be distributing draft data in the coming weeks, as it becomes available. In response to a question from Cathy Hlebechuk, Smith said the flow mixer study will likely run through September 15.

### ***3. Summer Water Temperature Conditions – Comparison of MASS 1 Model with 2001 Actual.***

Dick Cassidy spent a few minutes going through a series of graphs comparing actual water temperatures so far in 2001 with the water temperature outputs from the Corps' MASS 1 model for this period. The bottom line, said Cassidy, is that we feel the model has done pretty well, in terms of being right in the ballpark of the actual temperatures recorded at various points in the system.

### ***4. Incident Report on August 9 Load Rejection at The Dalles.***

Hlebechuk said that, last Thursday, August 9, power generation at The Dalles tripped off for about five hours, beginning at about 3:50 p.m. The project lost all four of their lines, she said; partial station service was restored by 4:30 p.m., and full station service was back by 5:30 p.m. Spill was increased to up to 105 Kcfs during the outage, she said; we were then able to return to normal operations and 40% spill at about 9 p.m. that evening. In terms of the effects of the outage on fish passage facilities, said Hlebechuk, orifice flow was maintained through the entire outage, but the two fish units which provide the attraction water were out of service until 1:55 p.m. and 4:47 p.m. the next day. The ice and trash sluiceway attraction water was not affected by the outage as it is drawn straight from the forebay.

Hlebechuk added that there was also a 30-35 gallon oil spill during the outage; project personnel used suction and oil enclosing devices to limit the spill. Project personnel did notice a sheen in the tailrace, and deployed sausages to clean that up, Hlebechuk said, adding that all of the appropriate environmental agencies were notified of the spill.

### ***5. IT Report.***

Wagner said that, this spring, NMFS' Donna Darm sent a letter to the action agencies,

spelling out the policy to be followed during the power system emergency, and how the situation would be evaluated and dealt with, in terms of the identification of offsetting actions, after the fact. My understanding of the discussion at last week's IT meeting is that they have instructed the TMT to begin that assessment, and to attempt to identify any appropriate offsetting actions, during their 2001 post-season review, Wagner said; the TMT will then forward any recommendations they develop to the IT.

In response to a question from Hlebechuk, Wagner said the Darm letter says that NMFS will take the lead in determining what offsetting actions may be possible, working closely with TMT. However, said Wagner, it is clear that this is the main forum in which those mitigation discussions should take place. Scott Bettin observed that there have already been a variety of offsetting measures funded, included the expanded northern pikeminnow bounty program. He distributed a summary of the offsetting actions taken by the action agencies to date. The intent is not, however, to attempt to mitigate for the drought year? Cindy Henriksen asked. Correct, Wagner replied.

Will NMFS make any conclusions it reaches available to the other TMT members prior to the year-end review? Christine Mallette asked. Yes, Wagner replied.

#### ***6. Biological Benefits of Summer Spill.***

Wagner distributed a memo from Gary Fredricks outlining NMFS' analysis of the biological benefits of summer spill. He said a modified version of the SYMPAS model was used to evaluate the effects of this year's operation; Wagner briefly described the assumptions underlying those modifications, then went on to say that the bottom line is that, at The Dalles, NMFS predicts a 4% increase in survival based on current spill levels; at Bonneville, NMFS would expect to see just over 6% increased survival if 50 Kcfs spill was provided around the clock. Please refer to Fredricks' memo for full details of the assumptions used and results produced by this analysis.

#### ***7. Dworshak Rampdown Schedule and September Operations.***

Hlebechuk said Dworshak is drafting rapidly; it was at elevation 1541 as of midnight last night.. We need to figure out how we're going to ramp that project down, Hlebechuk said; we can ramp down in one day, or we can ramp down more gradually. We also need to discuss if there is a desire to save some water for September.

Paul Wagner said the Lower Granite subyearling indices had been as low as 1,000 fish/day and had increased to 8,000 cfs this week. He recommended maintaining the full load discharge at Dworshak for as long as possible and utilize the water now rather than in September. All TMT members were in concurrence with this.

Steve Pettit recommended that Dworshak rampdown be accomplished over several days, as it has been done in years past -- drop the big unit the first day, drop one of the smaller units the second day, then go to minimum outflow the third day. After a brief discussion, the TMT recommended that Dworshak maintain full powerhouse discharge as long as possible, likely

through midnight on August , after which rampdown will begin as suggested by Pettit. Dworshak will then be at about elevation 1520 on August 31.

It was further agreed that, after August 31, Dworshak will maintain minimum outflow, with the goal of trying to reach the upper rule curve elevation of 1555 at that project by December 31. Dworshak will maintain minimum outflow through at least December unless a power system emergency occurs. In response to a question from Mallette, Hlebechuk said current inflows to Dworshak are about 1.2 Kcfs; September inflows are likely to be even lower – 700-800 cfs. With minimum outflow of 1.4 Kcfs-1.7 Kcfs, the Corps would expect Dworshak to draft to elevation 1516 feet by September 30.

#### **8. Current System Conditions.**

Hlebechuk said Libby continues to release 6 Kcfs; the project is essentially passing inflow. Current Libby elevation is now 2436.3 feet. The current elevation at Dworshak, again, is 1541 feet and drafting. Week-average flow last week at Lower Granite was 25.6 Kcfs; at McNary, 103.3 Kcfs; at Bonneville, 112.2 Kcfs. We are pulling water out of storage to maintain the spill program, Hlebechuk said, which, for the Corps at least, raises system reliability concerns.

Hlebechuk said the increase to the spill program was implemented as planned last week; Bonneville is now spilling 50 Kcfs around the clock, and The Dalles is spilling 40% of total river flow around the clock as long as flow is above 71 Kcfs. The summer spill program has used about 162.7 MW-months to date; if the spill program continues through August 31, the Corps estimates the program will use an energy equivalent of 425 MW-months.

Tony Norris said Hungry Horse has increased discharge to 1.8 Kcfs to maintain the Columbia Falls minimum; the current Hungry Horse elevation is 3541.9 feet. Grand Coulee elevation is now 1280.1 feet; the project is releasing about 80 Kcfs and targeting elevation 1278 (plus operating range) by August 31. Banks Lake elevation is now 1565 feet; pumping is occurring only at night.

Hlebechuk distributed a written summary of the 2001 January-July actual water supply figures. She noted that the final 2001 water supply at The Dalles was 58.2 MAF, 55% of normal, the second-lowest water year since 1929. In 2000, we had 93% of normal, she said. However, the 2001 July final forecast was 54.7 MAF at The Dalles, Wagner observed. Correct, Hlebechuk replied – the reason was that unregulated inflows went up in July , rather than down, as predicted in the July final forecast.

Bettin said there is no change to the status of power system reliability or the storage operation – we're still above the 28,000 MW-month federal storage target, he said. In response to a question from Henriksen, Bettin said BPA's analysis shows that system storage will still be above the 28,000 MW-month storage target at the end of September, even if the current spill program is maintained through August 31. We're continuing to analyze the storage situation, he said; we will provide a further update at the August 29 TMT meeting.

The group discussed the priority of B1 vs. B2 operations at Bonneville with respect to

adult attraction flows this fall; there was general agreement that some additional discussion of this topic is needed at a future TMT meeting.

Wagner spent a few minutes going through the status of the fish migration, noting first that subyearlings are the main area of activity at the present time. At Lower Granite, subyearling indices are picking up again after a long period of downward trend; the index was up to 8,000 yesterday. Indices have begun to pick up at Little Goose as well, he said. Subyearling numbers are on a downward trend at McNary, which is good, given the high water temperatures at that project, currently. Subyearling indices are on the increase at John Day; average travel time for Snake River subyearlings through the John Day pool (from McNary Dam to John Day Dam) is currently about 10 days, Wagner said. . In general, he said, subyearling migrants are still present in the lower river, in somewhat larger numbers and later in the season than is usually the case.

As for where we are in the migration, said Wagner, for subyearling chinook, the current prediction is that we're at the 92% passage point at Lower Granite. At McNary, the estimate is that we are at the 98% passage point in the combined subyearling chinook migration. At John Day, the estimate is that we are now at the 86% passage point in the subyearling chinook migration. Steelhead are still passing McNary at a rate of about 10,000 per day, Wagner added.

With respect to the juvenile migration, it looks as though we might be nearing the point where we should consider ending the spill program, Bettin observed. Wagner replied that, according to the DART passage estimates, there is still a ways to go in the juvenile migration; I would recommend that we continue to revisit the spill program on a week-to-week basis, he said.

In response to a question from Pettit, Rudd Turner said he will check to see whether the chilled water requirements at the Bonneville Powerhouse 2 sampling facility are being implemented.

### ***9. New System Operational Requests.***

On August 14, the Columbia River Inter-Tribal Fish Commission submitted SOR 2001 C-7. This SOR, supported by the CRITFC Tribes, requests the following specific operation at McNary Dam:

- **Spill 30 kcfs for 12 nighttime hours every other day during non-transport days.**
- **On days when not transporting return migrants directly to the river and do not route through the facility unless for sampling.**

Kyle Martin spent a few minutes going through the justification for this SOR, the full text of which is available via the TMT and/or Fish Passage Center homepages.

Wagner said NMFS' view is that full transport at McNary is the most prudent course of action as in-river conditions continue to deteriorate. That being said, said Wagner, we also understand CRITFC's point of view that conditions in the holding facility at McNary are also deteriorating. NMFS proposal is to go to daily transport at McNary to avoid holding the fish, said Wagner. Our understanding is that project personnel can begin trucking daily starting tomorrow,

Turner said.

Shane Scott said Washington's policy is to spread the risk; he recommended that daily transport from McNary in chiller-equipped trucks begin as soon as possible. In response to a question from Mallette, Turner said the barging contract has now ended at McNary; he is not sure where the funds would come from to reinstate it. Bettin observed that there appears to be little advantage to barging from McNary at this point in the season; temperatures in the river are warm, and barging takes at least a day longer than trucking for the fish to reach the release site below Bonneville Dam.

In response to a question from Mallette, Bettin said the energy cost of implementing the CRITFC SOR would be approximately 35 MW-months through the end of August. He added that BPA sees little biological benefit to implementing this SOR. In our view, there would be biological benefit to the late-migrating component of the run, Mallette replied. Steve Pettit said Idaho's position is that they would rather see daily trucking from McNary, with no holding whatsoever, given the extremely poor in-river conditions. He noted that only 50% of the fish are being transported from McNary; the remainder are being bypassed into some pretty hazardous migratory conditions. If you can't truck daily, he said, we may need to revisit this question.

It sounds, then, as though Washington and Idaho support daily trucking at McNary, said Hlebechuk. Mallette said Oregon's position is that a greater-than-optimal number of fish are transported; Oregon would prefer to see some spill provided at McNary, particularly for the late component of the chinook run. However, if daily trucking with no holding is what most of the other TMT members support, that is at least the second-best option, Mallette said. CRITFC disagrees, said Martin. Turner noted that this is actually a normal operating scenario at McNary, for this point in the season – full transport and no spill.

Does the same temperature concern extend to the Snake River projects as well? Margaret Filardo asked. Temperature conditions at Lower Granite are actually better than they are at McNary, Wagner replied – there is some stratification in that reservoir, and typically, raceway temperatures are similar to those in the river – about 66 degrees F. If the temperatures are that much lower at Lower Granite, he said, the degree of concern is lower as well.

Filardo said her understanding is that there is a problem with the number of trucks available to service Lower Granite; the options under consideration are to delay the transport from Lower Granite or to go to bypass mode at Lower Monumental. Turner replied that he was unaware of this situation, but if it becomes reality, there will be an emergency call to work out a solution.

## ***10. Recommended Operations.***

Hlebechuk said that, over the next two weeks, Libby will continue to release 6 Kcfs; Dworshak will continue at full powerhouse discharge until approximately August 27, at which point rampdown will begin as outlined in a previous agenda item. Grand Coulee will continue to draft toward elevation 1278 plus operating range. Norris said Hungry Horse will continue to draft toward its August 31 elevation of 3540 feet, operating as needed to meet the Columbia

Falls minimum. With respect to the duration of the spill program, Bettin said spill at Bonneville and The Dalles will continue through August 31, unless fish numbers are determined by NMFS to be low enough to justify discontinuation of spill, or if significant system reliability or financial concerns arise. It was agreed that NMFS or BPA will convene an emergency call if these conditions arise.

#### ***11. Review of Revised TMT Emergency Protocols.***

Hlebechuk said Wagner has drafted an additional paragraph to reflect 2001 emergency conditions, as agreed at the last TMT meeting; she said she still has a bit of work to do to make the flow chart compatible with the write-up. She said there are one or two additional minor changes to be made; she asked that anyone with additional changes to the emergency protocols to contact her as soon as possible. Hlebechuk said she will post the updated version of the emergency protocols to the TMT homepage and will send out an email notifying the TMT when the revised protocols are available for review. It was agreed that the group will attempt to finalize the emergency protocols at its August 29 meeting.

#### ***12. Identification of Data for TMT Year-End Review.***

The group spent a few minutes discussing data needs for the year-end review; it was agreed that further discussion of this topic will occur at the group's August 29 meeting.

#### ***13. End of MOP Operation.***

Bettin noted that this is traditionally the point in the season when the TMT discusses the end of the MOP operation. After a brief discussion, it was agreed to discuss the end of Lower Snake MOP operations at the next TMT meeting.

#### ***14. Next TMT Meeting Date.***

The next face-to-face meeting of the Technical Management Team was set for Wednesday, August 29. Meeting notes prepared by Jeff Kuechle, BPA Writer-Editor Pool.

#### **TMT PARTICIPANT LIST August 15, 2001**

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|------------------|---------------------|
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| Russ George        | Water Management Consultants Inc. |
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| Mark Smith         | COE                               |
| Glen Traeger       | Avista Energy                     |
| Rudd Turner        | COE                               |
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